

CLAIMS

1. An anti-fouling composition comprising
  - 5 (i) a surface coating material;
  - (ii) an enzyme obtained or obtainable from a marine organism; and
  - (iii) (a) a substrate for the enzyme; and/or
    - (b) a precursor enzyme and a precursor substrate, wherein the precursor enzyme and the precursor substrate are selected such that a substrate for the enzyme is generatable by action of the precursor enzyme on the precursor substrate;

10 wherein the enzyme and the substrate are selected such that an anti-foulant compound is generatable by action of the enzyme on the substrate.
- 15 2. A composition according to claim 1 wherein the enzyme is obtained or is obtainable from a marine alga.
3. A composition according to claim 1 wherein the enzyme is obtained or is obtainable from *Chondrus crispus*.
- 20 4. A composition according to claim 1 wherein the enzyme is hexose oxidase.
5. A composition according to claim 4 wherein the hexose oxidase enzyme comprises the amino acid sequence set out in SEQ ID No 2 or a variant, homologue, derivative or fragment thereof.
- 25 6. A composition according to claim 1 wherein the substrate is a sugar.
7. A composition according to claim 6 wherein the sugar is glucose.
- 30 8. A composition according to claim 1 wherein the composition comprises a

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(b) a precursor enzyme and a precursor substrate, wherein a substrate for the enzyme is generated by action of the precursor enzyme on the precursor

substrate;

wherein the anti-fouling compound is generated by action of the enzyme on the substrate.

5 17. A composition as substantially hereinbefore described with reference to the Examples.

18. A coating as substantially hereinbefore described with reference to the Examples.

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19. A marine anti-foul as substantially hereinbefore described with reference to the Examples.

20. A method as substantially hereinbefore described with reference to the  
15 Examples.

21. An anti-fouling composition comprising:

- (i) a surface coating material;
- (ii) an enzyme obtained or obtainable from a marine organism; and
- 20 (iii) a substrate for the enzyme;

wherein the enzyme is hexose oxidase, and the substrate is sugar, such that an anti-foulant compound is generated by action of the enzyme on the substrate.

22. An anti-fouling composition comprising:

- (i) a surface coating material;
- 25 (ii) an enzyme obtained or obtainable from a marine organism; and
- (iii) a substrate for the enzyme;

wherein the enzyme is hexose oxidase having the amino acid sequence set forth in SEQ ID NO: 2, and the substrate is sugar, such that an anti-foulant compound is generated by action of the enzyme on the substrate.

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23. An anti-fouling composition comprising:

- (i) a surface coating material;
- (ii) an enzyme obtained or obtainable from *Chondrus crispus*; and
- (iii) a substrate for the enzyme;

wherein the enzyme is hexose oxidase, and the substrate is sugar, such that an anti-foulant compound is generated by action of the enzyme on the substrate.

24. An anti-fouling composition comprising:

- (i) a surface coating material;
- (ii) an enzyme obtained or obtainable from *Chondrus crispus*; and
- (iii) a substrate for the enzyme;

wherein the enzyme is hexose oxidase having the amino acid sequence set forth in SEQ ID NO: 2, and the substrate is sugar, such that an anti-foulant compound is generated by action of the enzyme on the substrate.

25. An anti-fouling composition comprising:

- (i) a surface coating material;
- (ii) an enzyme obtained or obtainable from a marine organism; and
- (iii) a substrate for the enzyme;

wherein the enzyme is hexose oxidase, and the substrate is glucose, such that an anti-foulant compound is generated by action of the enzyme on the substrate.

26. An anti-fouling composition comprising:

- (i) a surface coating material;
- (ii) an enzyme obtained or obtainable from a marine organism; and
- (iii) a substrate for the enzyme;

wherein the enzyme is hexose oxidase having the amino acid sequence set forth in SEQ ID NO: 2, and the substrate is glucose, such that an anti-foulant compound is generated by action of the enzyme on the substrate.

27. An anti-fouling composition comprising:

- (i) a surface coating material;

- (ii) an enzyme obtained or obtainable from *Chondrus crispus*; and
- (iii) a substrate for the enzyme;

wherein the enzyme is hexose oxidase, and the substrate is glucose, such that an anti-foulant compound is generated by action of the enzyme on the substrate.

5 28. An anti-fouling composition comprising:

- (i) a surface coating material;
- (ii) an enzyme obtained or obtainable from *Chondrus crispus*; and
- (iii) a substrate for the enzyme;

wherein the enzyme is hexose oxidase having the amino acid sequence set forth in  
10 SEQ ID NO: 2, and the substrate is glucose, such that an anti-foulant compound is generated by action of the enzyme on the substrate.

29. A composition according to claim 4 wherein the hexose oxidase enzyme comprises the amino acid sequence set out in SEQ ID NO:2.

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